

# Syllabus

## *Descrizione corso*

<b>Titolo insegnamento</b>	Analisi, gestione e sicurezza dei dati
<b>Codice insegnamento</b>	30191
<b>Titolo aggiuntivo</b>	
<b>Settore Scientifico-Disciplinare</b>	STAT-04/A
<b>Lingua</b>	Tedesco
<b>Corso di Studio</b>	Corso di laurea in Management del Turismo, dello Sport e degli Eventi
<b>Altri Corsi di Studio (mutuati)</b>	
<b>Docenti</b>	
<b>Assistente</b>	
<b>Semestre</b>	Secondo semestre
<b>Anno/i di corso</b>	3
<b>CFU</b>	6
<b>Ore didattica frontale</b>	36
<b>Ore di laboratorio</b>	-
<b>Ore di studio individuale</b>	-
<b>Ore di ricevimento previste</b>	18
<b>Sintesi contenuti</b>	This course introduces key concepts and practical skills in data management, analysis, and protection, with a focus on applications in the tourism sector. Topics include data collection, storage, cleaning, and visualization; basic statistical and machine learning methods; and hands-on work with the R software for exploring and analyzing real-world tourism data. Students will also gain an understanding of legal frameworks for data protection and develop the ability to assess both the value and risks of data.
<b>Argomenti dell'insegnamento</b>	
<b>Parole chiave</b>	

<b>Prerequisiti</b>	
<b>Insegnamenti propedeutici</b>	
<b>Modalità di insegnamento</b>	
<b>Obbligo di frequenza</b>	-
<b>Obiettivi formativi specifici e risultati di apprendimento attesi</b>	<p>Knowledge and understanding</p> <p><b>QUANTITATIVE METHODS</b></p> <p>Basic mathematical concepts (sets and operations on sets, relationships and their properties, general functions, numbers and elementary equations/inequalities)</p> <p>Functions of a real variable: Basic properties, derivatives and their calculation including first order partial derivatives</p> <p>Optimisation problems of one variable: Concepts and conditions of optimality, convexity, algorithmic approach. - Integrals for functions of one variable: indefinite integrals, integrals and defined surfaces, integral calculus.</p> <p>Descriptive statistics and summarising data: Variables, frequency distributions, measures of central tendency and variability.</p> <p>Mathematical terminology in English.</p> <p>the basic concepts of linear algebra: matrices and matrix calculus, vectors and their geometric applications, systems of linear equations.</p> <p>Functions with several variables: partial derivatives and gradient, convexity.</p> <p>Optimisation problems for several variables: Optimality concepts and conditions, for the unconstrained and constrained case, Lagrange method.</p> <p>the basic concepts of inferential statistics: punctual estimation; confidence interval; hypothesis testing; linear regression.</p> <p>the concept of uncertainty and the basic elements of probability theory.</p> <p>the basic concepts of sampling theory.</p> <p>the basic concepts of inferential statistics: punctual estimation; confidence interval; hypothesis testing; linear regression.</p> <p>Relationships between variables and basic concepts in hypothesis testing.</p> <p>Statistical terminology</p> <p>the software available for data analysis in the social sciences.</p> <p>the basics of linear programming in economics and management.</p> <p>Fundamentals of the concepts of uncertainty, ambiguity and</p>

	<p>robustness in the context of data analysis.</p> <p>the basis of order theory, in particular partial and total (linear) order relationships.</p> <p>the effects of non-total order relationships on decision models</p> <p>"Best practices" and important Excel functions for data collection, processing and visualisation</p> <p>the mechanisms for creating and utilising big data and the impact on the business environment</p> <p>the monetary value of personal and business data. - basic methods and algorithms for analysing data and machine learning methods.</p> <p>the concept of data security from a legal and technical perspective</p>
	<p>Ability to apply knowledge and understanding</p> <p><b>QUANTITATIVE METHODS</b></p> <p>basic concepts useful for attending courses in economics, business administration and management</p> <p>economic problems with multiple variables in a formalised way; ability to identify (optimal) solutions and interpret the results based on existing theories.</p> <p>Calculate differentials and integrals of real functions. Ability to solve optimisation problems with one variable.</p> <p>Define economic problems in a formalised way; find (optimal) solutions based on existing theories and interpret results.</p> <p>use mathematical tools to analyse static and dynamic models.</p> <p>analyse mathematical problems and models as well as ideas for their solution.</p> <p>Use mathematical tools to analyse static and dynamic models with multiple variables.</p> <p>Use matrices to represent data and manage them for transformations and calculations.</p> <p>statistical methods as useful research tools in the social sciences.</p> <p>Use descriptive and inferential statistics to summarise information, analyse and interpret relationships between variables and test hypotheses.</p> <p>at least one statistical application to develop a simple data analysis.</p> <p>the use of algorithms/applications to solve linear programmes and their dual problem.</p> <p>Solving zero-sum games between two people using linear</p>

	<p>programming</p> <p>Solving linear programs for business problems: cost and revenue optimisation, logistics design and optimisation, inventory flow planning, etc.</p> <p>Using mathematical methods to model risks (uncertainties) and to solve expected utility maximisation problems.</p> <p>Distinguish between decision situations with complete and incomplete preferences and then use the appropriate model.</p> <p>Use Excel to collect, process and visualise data.</p> <p>Use web services to analyse data online.</p> <p>Understand the basic principles of modern data analysis concepts, such as machine learning.</p> <p>Deal with data security issues in corporate environments.</p> <p><b>Making judgements</b></p> <p>Identify the most important variables to use when making judgements in complex situations;</p> <p>Report analytically and critically on information, experience and data to make appropriate business decisions;</p> <p>select the most appropriate quantitative and qualitative analytical tools to support decision making;</p> <p>find necessary additional information in databases, legal documents and scientific sources;</p> <p>find solutions by using logical reasoning and combining information and analytical tools</p> <p><b>Communication skills</b></p> <p>Achievement of this objective is assessed by means of written examinations, group work, assignments, presentations of case studies and projects as well as the final thesis.</p> <p><b>Learning skills</b></p> <p>the ability to retrieve and utilise information from databases, research studies, legal texts, regulations and standards needed in their professional life;</p> <p>the ability to analyse, critically assess and integrate data, information and experience;</p>
<b>Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)</b>	

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<b>Modalità di esame</b>	
<b>Criteri di valutazione</b>	
<b>Bibliografia obbligatoria</b>	
<b>Bibliografia facoltativa</b>	
<b>Altre informazioni</b>	
<b>Obiettivi di Sviluppo Sostenibile (SDGs)</b>	